

I claim:

1. A method for configuring a tagged virtual connection in a communication network, said virtual connection interconnecting a first boundary device with a second boundary device via  $N$  intermediate devices, where  $N$  is a positive integer, the method comprising:

(a) on a first boundary device, generating and forwarding to a first intermediate device a first tag allocation request;

(b) if  $N$  is greater than one, on an  $(N-M)$ th intermediate device, in response to an  $(N-M)$ th tag allocation request, generating and forwarding to an  $(N-M+1)$ th intermediate device an  $(N-M+1)$ th tag allocation request, where  $M$  is initially equal to  $N-1$ ;

(c) if  $N$  is greater than one, repeating step (b) for each integral value of  $M$  between  $N-1$  and zero, excluding  $N-1$  and zero; and

(d) on an  $N$ th intermediate device, in response to an  $N$ th tag allocation request, generating and forwarding to a second boundary device an  $(N+1)$ th tag allocation request, wherein tag values are allocated and transmitted between said devices in relation to said tag allocation requests,

wherein said tag values are applied to establish a tagged virtual connection for transmitting end-user messages, and

wherein at least one of said tag allocation requests is included in a tag allocation message having a plurality of tag allocation requests.

2. The method of claim 1, wherein said tag allocation message includes a multi-field tag allocation request block for each of said plurality of tag allocation requests.

3. The method of claim 2, wherein said each tag allocation request block includes a source device identifier.

4. The method of claim 2, wherein said each tag allocation request block includes a destination device identifier.

5. The method of claim 2, wherein said each tag allocation request block includes a tag value.

6. The method of claim 1, wherein said tag values are transmitted between said devices in said tag allocation requests.

7. A method for configuring a tagged virtual connection in a communication network, said virtual connection interconnecting a first boundary device with a second boundary device via  $N$  intermediate devices, where  $N$  is a positive integer, the method comprising:

(a) exchanging first tag allocation information including a first tag value between a first boundary device and a first intermediate device;

(b) if  $N$  is greater than one, in response to the exchange of  $(N-M)$ th tag allocation information, exchanging  $(N-M+1)$ th tag allocation information including an  $(N-M+1)$ th tag value between an  $(N-M)$ th intermediate device and an  $(N-M+1)$ th intermediate device, where  $M$  is initially equal to  $N-1$ ;

(c) if  $N$  is greater than one, repeating step (b) for each integral value of  $M$  between  $N-1$  and zero, excluding  $N-1$  and zero; and

(d) in response to the exchange of  $N$ th tag allocation information, exchanging  $(N+1)$ th tag allocation information including an  $(N+1)$ th tag value between an  $N$ th intermediate device and a second boundary device,

wherein said tag values are applied to establish a tagged virtual connection for transmitting end-user messages,

wherein said tag allocation information is exchanged between said devices in relation to tag allocation requests, and

wherein at least one of said tag allocation requests is included in a tag allocation message having a plurality of tag allocation requests.

8. The method of claim 7, wherein said tag allocation message includes a multi-field tag allocation request block for each of said plurality of tag allocation requests.

9. The method of claim 8, wherein said each tag allocation request block includes a source device identifier.

10. The method of claim 8, wherein said each tag allocation request block includes a destination device identifier.

11. The method of claim 8, wherein said each tag allocation request block includes a tag value.

12. The method of claim 7, wherein said tag values are transmitted between said devices in said tag allocation requests.